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THE POSSIBILITY OF COMPILING AN INDEX OF THE COST OF LIVING

BY ROYAL MEEKER

United States Bureau of Labor Statistics

The high cost of living has nothing to do with high prices. It is merely the common term used to express the relation between the price of labor (wages) and the prices of foods, clothes, house room, fuel, etc. The high cost of living stalked through the land even in the days of Charlemagne, when a whole beef could be bought for less than the price of a single sirloin steak today. Men complained bitterly of the high cost of living in that golden age when eggs sold for 8 cents a dozen instead of 8 cents apiece. Probably we pay at least twenty times as much for the necessities and comforts of life today as men paid in the thirteenth century, but the cost of living is no higher now than then, and we undoubtedly live much more comfortably, completely, and healthfully. In fact, we might say that generally the lower the prices the higher the cost of living. In India and China, long the countries of lowest prices, the cost of living is so high as to put life itself beyond the purchasing power of tens of thousands of the people.

The price level is of no consequence, except to the mere historian and antiquarian. It is the changing of price levels which causes distress and is of concern to the economists and all who buy and sell things. This has been recognized from the beginning of history. Efforts have been made from the earliest times to fix prices by royal proclamations, decrees, and by legislative enactments. Some economists, notably, General Francis A. Walker and Colonel William Jennings Bryan, have advocated a bimetallic coinage on the ground that prices would thereby be held more stable, the theory being that when gold is plentiful and cheap, silver would be rare and dear, and vice versa, so that fluctuations in the purchasing power of both metals would never be as great as the fluctuations in either one separately.

A good many economists have theorized about a commodity standard of value, setting forth its theoretical advantages. The latest commodity standard plan—and to my mind the only one likely to succeed—is President Irving Fisher's well-known plan for standardizing or stabilizing the dollar. This plan depends absolutely for its workability upon the possibility of computing a reasonably accurate cost-of-living index. Unless this can be done, it is not worth while talking about the great benefits that would result if the impossible were possible.

Until quite recently I have felt doubtful about the practicability of changing the present dollar from a most deceptive, inconvenient, and mischievous standard of weight, constantly changing in value, into an approximately unchanging standard of value, constantly changing in weight. My scepticism was due to the staggering difficulties in computing a satisfactory index of the cost of living. It seemed another instance, so familiar to the economist, especially the tariff economist, where a proposal is "all right in theory but won't work in practice." The very foundation of the "stabilized dollar" is the index number of the cost of living. As it is one of my principal jobs to furnish the country and the world with index numbers showing changes in prices of various commodities at wholesale and retail, no one realizes quite so keenly as I just how unstable the basis for the "stabilized dollar" really is, or rather was until this present moment. I do not need to waste time in pointing out the absurdity of using a wholesale price index as indicative of changes in the cost of living for the purpose of stabilizing the dollar. Retail prices of all commodities consumed by the great mass of people are the rock bottom upon which a commodity standard of value must rest. Until now, I have been wholly unwilling to recommend the United States Bureau of Labor Statistics retail price indexes as a suitable foundation for Professor Fisher's "stabilized dollar." The retail price index published every month in the *Monthly Labor Review* is an index number of the retail prices of food commodities only. Expenditures for food make up more than 40 per cent of the total budget of the families of shipyard workers, but I think it would be wholly inadvisable to change the gold content of the "stabilized dollar" to conform with changes in the prices of food alone. This would not be a fair test of the underlying principle in Professor Fisher's scheme. I, for one, would not be willing to risk the stability of the "stabilized dollar," stabilized on less than half the total family expenditure. It so happens that the percentage changes in the cost of the family food budget during the period since 1913 does conform rather closely with changes in the cost of the whole family budget as shown in our studies of cost of living in shipbuilding centers. But this is largely fortuitous and somewhat fictitious. When prices come down, as they probably will some day, we cannot assume that food prices will move in unison with the prices of other commodities consumed by workers' families. If we are to advocate a "stabilized dollar" (which is merely another name for a commodity standard of value, or what Pro-

fessor Fisher picturesquely calls the "market basket" standard) we must be able to put our case so as to command the confidence and support of the manufacturers, the business men, and especially the workers. No amount of eloquence explaining how the prices of the necessities of life actually vary in close conformity with food prices will satisfy the horny-handed laborer and the equally horny-headed business man with a *food index* represented as showing changes in *cost of living*. Both will rightly demand to be shown and we must be in a position to show them.

The question doubtless is in the minds of many of you: Why not use the cost of living figures for shipbuilding centers? There are four reasons why I am not willing to use these indexes to show changes in the cost of living either for the whole country or for geographical districts:

1. The shipbuilding centers are too few in number and they are quite abnormal industrial communities.

2. The haste with which we were obliged to make the cost-of-living survey in those centers did not permit us to get retail prices of miscellaneous items of expenditure so as to enable us to compute accurately changes in the cost of this large part of the family budget. Next after food miscellaneous expenses are by far the most important group in the family budget. The cost of miscellaneous items of expenditure was of course obtained in the shipbuilding study, but the retail prices of these items were not obtained. In computing indexes for the different shipbuilding centers, it was assumed that miscellaneous items fluctuated exactly the same on the average as all other items of expense. This assumption gave all the advantages to the workingman during the period of violently ascending prices since 1916, for undoubtedly miscellaneous items have remained much more stable than the average of other items.

3. There was no time to calculate new weights based on the quantities of each article consumed in the average workman's family today, so the old and rather imperfect weights obtained in the 1901 study had to be used. We can and ought to revise these weights, using the facts as to the family consumption which we are finding in the present study. Except for articles of food, the individual items of consumption are not weighted within each group or class, according to their importance in the family budget. In the clothing group, for instance, suits, nightshirts, socks, caps, shoes, neckties, shirts, and handkerchiefs all have equal weight. Quite possibly weighting within the groups will not change the

percentage change in cost of the groups as wholes, but we have no ground for assuming this to be the case. To be sure, all experience has shown that it makes but little difference what methods are used in computing an index number. However, science, common sense, and expediency all require the extension of the weighting of individual items to all groups of the family budget.

4. The lists of articles for which retail prices were obtained in shipbuilding centers are not so satisfactory as it is possible to make them. In the cost-of-living study now in progress, we are getting retail prices for a larger number of articles and, profiting by our experience, we are using greater care to secure identification marks so we can get prices in the future for the identical articles or the nearest thing to them. The retail price schedules for food; men's, women's and children's clothing; fuel and lighting; housing; furniture and house furnishings; and miscellaneous items have all been carefully revised and greatly improved.

As a rule, there is but little difference between a weighted and the so-called unweighted index number. This general rule does not seem to apply to family budget indexes. We know that there are great differences between the weighted and the unweighted food budget, and it seems inevitable that similar differences will be shown for the clothing group and the miscellaneous group when we get weightings for them. In the food group, potatoes, because of their great importance in consumption, exercise a great influence over the food index and the total budget index. Sometimes potatoes carry the whole food index against the current of food prices in general. The preponderance of potatoes and their sudden and enormous price variations in the autumn, and more especially in the spring, make them most unpopular with the makers of cost-of-living index numbers. At a former meeting of this Association, I warned wayfaring statisticians and economists of the deeply deceptive character of the potato. Apparently the potato is merely an innocent and astonishingly prolific and wholesome member of the vegetable kingdom; but statistically it is a ravening wolf masquerading as a humble tuber. It is undoubtedly an invention of the devil for the purpose of making the way of the statistician hard and his life a burden. The malignant power of the potato may yet defeat the benignant plan to stabilize the dollar, for the potato does not submit kindly to the yoke of the index number. The story of the potato is very difficult to record statistically. The enormous seasonal changes in prices are due to the difference between new and old potatoes, which make them in re-

ality entirely different economic commodities. I think a special joint committee of the American Economic Association and the American Statistical Association should be named to study potatoes and determine when a new potato becomes what we may call a tabulatable potato and when an old potato ceases to be a potato at all.

The prices of several other articles of food fluctuate just as capriciously and as violently as potato prices, but these other articles are relatively unimportant so we can ignore them or set down their price vagaries with a calm, unruffled spirit. Nor need our equanimity be disturbed by the wildly varying price of wearing apparel, such as, for instance, women's hats; for although each feminine hat is a distinct and separate economic entity and there are violent seasonal and cyclical variations in the prices, shapes, material, and qualities of hats, yet the total effect of women's hats on the cost-of-living index number and consequently on the "stabilized dollar" is negligible, compared to the devastating effect of the potent potato.

For the purposes of a cost-of-living index number to be used in making wage adjustments and as the standard of value or "stabilized dollar," it is necessary to get more detailed information about the quantities of articles consumed and their retail prices than have been obtained in former studies. These surveys in shipbuilding centers were made hurriedly to meet a war emergency. Consequently short cuts were used and the large assumption regarding miscellaneous prices was made to save an enormous amount of field work and office tabulations which would otherwise have been necessary.

The apportionment of family expenditures in the New York Shipbuilding District and the percentage changes in the several classes of expenditure since December, 1914, are as follows:

Group	Average Expenditures per Family	Proportion of Total Expen's	Percentage Increase over Dec. 1914			
			Dec. 1915	Dec. 1916	Dec. 1917	Oct.-Nov. 1918
Food	\$607.02	45.01	1.34	16.26	55.28	77.7
Clothing	200.07	14.84	4.82	22.31	54.21	129.74
Housing	174.14	12.91	¹ .10	¹ .05	2.63	5.89
Fuel and Light	62.21	4.61	¹ .06	10.98	19.92	37.26
Furniture, etc.	43.58	3.23	8.43	27.60	56.47	122.91
Miscellaneous	261.62	19.40	1.97	14.91	44.68	75.28
Total	\$1,348.64	100.00	1.97	14.91	44.68	75.28

¹ Decrease.

A brief examination reveals why the increase in all items conforms so closely with the increase in the food budget. First, food is much the most important single item of expense. Secondly, its preponderating influence is increased by assuming that changes in miscellaneous items always equal the average of all other articles. Thirdly, it so happened that changes in the prices of clothing and of housing when averaged together show an increase approximately the same as the increase in the price of food. These two groups constitute approximately 30 per cent of the total budget. The four groups mentioned (food, clothing, housing, and miscellaneous) make up more than 90 per cent of the entire budget. It would certainly be quite unwarranted to assume that price changes are always going to take place in such a way that the changes in prices of clothing and housing will always average approximately the same as changes in food prices. It is even more unwarranted to assume that miscellaneous items change in like manner and degree with the prices of the other items of the budget. If, for example, we found, as is quite likely the case, that miscellaneous items weighted according to importance in consumption increased only 10 per cent, then the cost-of-living index for October, 1918, for New York, would be only about 161 per cent instead of 175 per cent—a difference that is by no means negligible.

The showing for Seattle, Washington, is as follows:

Group	Average Expenditures per family	Per cent	Percentage Increase over Dec., 1914			
			Dec. 1915	Dec. 1916	Aug. 1917	June 1917
Food	\$576.38	36.75	12.75	8.46	38.65	51.87
Clothing	240.70	15.34	1.19	11.31	36.44	162.26
Housing	211.51	13.48	12.42	15.41	10.55	16.70
Fuel and Light	73.19	4.66	10.19	2.93	23.85	45.96
Furniture, etc.	73.87	4.71	8.52	27.43	52.29	82.67
Miscellaneous	393.45	25.08	11.02	7.40	31.08	49.24
Total	\$1,569.10	100.00	11.02	7.40	31.08	49.24

¹ Decrease.

The proportion of expenditure for the miscellaneous group is much larger in Seattle than in New York, and for food much lower. Clothing and housing are approximately the same for both cities. Again these four groups make up more than 90 per cent and miscellaneous items alone constitute more than one fourth of the entire budget. If investigation proved that the increase

in the cost of miscellaneous items of expenditure in June, 1918, over December, 1914, was actually only 10 per cent instead of 49.24 as assumed, then the index number for the entire family budget would be only 139.46 per cent instead of 149.24, a difference of 9.78 points or more than $6\frac{1}{2}$ per cent less than the index compiled by the Bureau of Labor Statistics for the use of the Labor Adjustment Board. It may be that our present studies will not reveal the wide discrepancies I have assumed for illustration, but we cannot expect either employers or employees to accept our index number unless it reflects the actual price changes weighted according to importance in consumption of all the principal items of family consumption.

The wide variation in the average family budgets of the shipyard workers in New York and in Seattle emphasizes the absolute necessity for establishing standard budgets for typical workmen's families composed of husband, wife, and three children under fifteen years of age. These standard budgets are needed most urgently by the Wage Adjustment Board for the purpose of fixing wages so as to insure a minimum of decency and health to the workers. After all these years of investigation and statistical toil in the cost-of-living field, we don't know clearly the difference between the higher costs of living and the costs of higher living. By examining the schedules carefully we could tell approximately whether the Seattle family expending \$576.38 per annum for food is sufficiently well fed, but we could scarcely tell whether the New York family spending \$607.02 per annum for food is any better fed. Except for food, scarcely any attempts have been made to determine what are proper standards of decency, health, and comfort. We cannot, to save our lives, tell whether the Seattle family with an income of \$1569.10 is better or worse off than the New York family with \$1348.64 income. We do know that most workman's families in the United States spend all their income. Does that mean that American families are extravagant or does it mean that they are living at or below the margin of decency and health?

Standard budgets for the different geographical sections of the country giving due recognition to climatic differences, personal and family idiosyncracies and commonly accepted differences in social requirements, are indispensable if we are to measure with accuracy changes in the cost of living. We can take the annual budgets as we find them in different communities and measure

changes in the costs of these budgets from time to time. But changes in the cost of an actual budget may differ quite markedly from changes in the cost of a sufficient budget properly balanced.

It is a task of enormous difficulty and of endless and infinite detail to collect the retail prices of the more important articles of family consumption, weight them according to their importance in consumption as determined by our budget studies, and compute therefrom a refined index number of cost of living. The task is not, however, impossible as I at one time feared. In fact agents of my Bureau have already collected the prices necessary for the computation of the refined cost-of-living index number for Washington and Baltimore, and the work is well under way in half a dozen other cities. All that is needed now is about a thousand competent clerks to carry through the copying, sorting, tabulation, and computation of the budget items and retail prices so as to make the index number so long yearned for. I here for the first time publicly proclaim that not only is an index number of the cost of living a theoretical possibility but it is a practical fact in process of coming into being as rapidly as the Bureau of Labor Statistics can push the work along.

Once such an index number has been achieved it will be necessary to bring it up to date at least every six months, preferably, I think, every three months. It will cost money to do this. The studies in shipbuilding centers and the present countrywide study were undertaken by direct authorization of President Wilson, and were paid for out of his special fund. If the results of these studies are to be fully realized, Congress must be awakened to the significance and value of this information. Much larger appropriations to the Bureau of Labor Statistics will be necessary to enable the retail prices to be collected and tabulated rapidly enough and frequently enough for the purposes of a usable index number of the cost of living.

A word of explanation of the methods used in getting the family budgets and retail prices seems necessary. The present study includes large, medium sized, and small industrial towns located in the different geographical sections. All but three states are represented. Agents of the Bureau of Labor Statistics visit the housewives and obtain from them at a single interview, if possible, an estimate of the quantities of the different articles consumed by their families during the past year and the cost of each item. This seems absurd. Not one housewife in 10,000 can tell

you off-hand the quantity and cost of beef, pork, potatoes, beans, cabbage, hats, shoes, shirts, shirtwaists, dresses, suits, chiffoniers, coal, kerosene, car rides, movie tickets, newspapers, etc., which her family has consumed for an entire year. I felt very sceptical of this method of getting at the cost of living. I tested it out in the District of Columbia study by having more than a hundred families representing the different income groups keep itemized accounts of all expenses for a month. This gave us an excellent check on the expenditures for food, but not for other classes of expenditures. The two methods tallied very closely on food consumption as to kinds, quantities, and costs. This convinced me that it is possible to get accurate estimates of itemized family expenses by the interview method. The family expense-account method may perhaps be better but it is of course utterly impossible because of the time required. It is also very difficult to get a proper representation of the different income groups.

The expenditures are estimates, but they are, I am convinced, very accurate estimates. The housewife knows what she spent for food today and this week. With the help of an experienced agent, armed with the Bureau of Labor Statistics family budget schedule containing 474 items, the housewife does estimate very accurately what she has bought and what she has paid. All discrepancies are noted by the agent and must be explained or corrected. The total family income from all sources is ascertained. If the income seems too large or too small for the kind of work performed by the wage earners, it is checked with pay envelopes or the wage rates paid by the shops. I was asked by the arbitrator in a wage hearing if the housewives did not pad their expenses so as to show a higher cost of living than really exists, for the purpose of helping their husbands to get a larger increase in wages. My reply was that it is impossible for the housewife to fool our experienced agents. Our agents have many checks on the accuracy of the housewife. A padded budget of expenditures would be discovered at once because of the discrepancies between income and outgo. If income is padded, that is checked by the methods referred to above. A few schedules have been rejected because of evident errors. Above all, American housewives almost without exception are not only honest and truthful, but immensely interested in going over their expenditures for the purpose of finding out where and how the money went.

A large number of families are keeping daily expense accounts

for the Bureau. These expense records will give us very useful checks on the family budgets for a year obtained by interview. The Domestic Science departments in some of our universities and colleges are giving invaluable assistance in obtaining these daily expense records. Some of these accounts will be kept for two periods of five weeks each at different seasons of the year. Some we hope to keep running throughout the year with the assistance of the Domestic Science students. These daily expense accounts should give us very valuable facts which will enable us to check and perhaps modify our family budgets.

Granted that budgets obtained by interview are estimates, there is no other way under heaven of getting at the cost of living with any possibility of accuracy. The English have just completed a survey of cost of living by the questionnaire method. Schedules were handed out to housewives by the agents in charge of the employment offices. These were filled out by the housewives without any supervision or assistance whatsoever. Needless to say, the information is not detailed enough to enable a weighted budget to be made up, without which a cost-of-living index number is utterly impossible. For myself I have no faith in the questionnaire method of studying cost of living. I would not bother to tabulate the misinformation gathered in that way.

Quite as important as the obtaining of family budgets is the obtaining of accurate retail prices of a sufficient number of the more important standard articles bought by the families studied to represent fairly the kind of articles consumed by these families, so that changes in prices of these representative articles may be translated readily and with approximate accuracy into changes in family expenditure. The articles priced must be accurately described so that in future prices may be obtained of the same article or some other article approximately identical. I am confident that both the family budgets and the retail prices being secured by agents of the Bureau of Labor Statistics are accurate and thoroughly dependable.